

## Claims

1. Method for routing a connection (V) from a first mobile station (MS1) to a second mobile station (MS2) by way of at least one further mobile station (MS3) in a wireless communication system, in which
  - positional information (PI1..3) is acquired by way of the first mobile station (MS1), the second mobile station (MS2) and by way of the further mobile stations (MS3),
  - 10 - a central routing device (R) determines a route for the connection (V) based on the positional information (PI1..3),
  - and the routing device (R) generates routing information (RI) corresponding to the determined route and transmits this routing information to the first mobile station (MS1),  
15 the second mobile station (MS2) and also the further mobile stations (MS3).
2. Method according to Claim 1, in which
  - 20 - the mobile stations (MS1, MS2, MS3) are located in wireless range of at least one base station (BS) of a cellular mobile wireless network,
  - the routing device (R) transmits the routing information (RI) to the base stations (BS)
  - 25 - and the base stations (BS) transmit the routing information (RI) to the mobile stations (MS1, MS2, MS3).
3. Method according to Claim 2, in which the mobile stations (MS1, MS2, MS3) determine the positional  
30 information (PI1..3) and transmit it for acquisition purposes to the base stations (BS).
4. Method according to one of Claims 2 or 3, in which
  - the mobile stations (MS1, MS2, MS3) have a first operating

mode in which they are operated in the cellular mobile wireless network in accordance with a first wireless standard,

- the mobile stations (MS1, MS2, MS3) have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard,
- and during the connection (V) for which the routing device (R) determines the routing information (RI) the mobile stations (MS1, MS2, MS3) are operated in the second operating mode.

5. Method according to Claim 4, in which the mobile stations (MS1, MS2, MS3) are only placed in the second operating mode when the cellular mobile wireless network reaches a limit value for its capacity loading.

6. Method according to one of the preceding claims, in which

- the second mobile station (MS2) makes available a particular service (S),
- service information (SI) concerning the service (S) made available by the second mobile station (MS2) is stored in a storage device (M),
- the stored service information (SI) is communicated to the first mobile station (MS1),
- on the basis of the service information (SI) notified to it, the first mobile station (MS1) then signals to the routing device (R) that it would like to access the service (S),
- and the routing device (R) then establishes the connection (V) from the first mobile station (MS1) to the second mobile station (MS2) by generating the corresponding routing information (RI).

7. Method according to Claim 6 in conjunction with one of

Claims 2 to 5, in which  
the base stations (BS) broadcast the service information (SI)  
stored in the storage device (M).

5 8. Method according to one of the preceding claims, in which  
the routing information (RI) contains details concerning the  
transmit power level with which the mobile stations (MS1, MS2,  
MS3) participating in the connection are to operate the  
connection (V).

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9. Method according to one of the preceding claims, in which  
the routing information (RI) contains details concerning which  
transmission resources the mobile stations (MS1, MS2, MS3)  
participating in the connection (V) are to reserve for the  
15 connection.

10. Method according to Claim 8, in which  
on termination of the connection (V) the routing device (R)  
instructs the mobile stations (MS1, MS2, MS3) participating in  
20 the connection to terminate the reservation of the  
transmission resources for this connection.

11. Wireless communication system

- having a first mobile station (MS1), a second mobile  
25 station (MS2) and also further mobile stations (MS3, MS4,  
MS5),
- having a storage device (M) for storing positional  
information (PI1..5) about the first mobile station (MS1),  
the second mobile station (MS2) and also about the further  
30 mobile stations (MS3, MS4, MS5),
- having a central routing device (R) for determining a route  
for a connection (V) between the first mobile station (MS1)  
and the second mobile station (MS2) by way of at least one  
of the further mobile station (MS3) on the basis of the

stored positional information (PI1..5), and for generating routing information (RI) corresponding to the determined route,

- whose routing device (R) has a transmit unit (TX/RX) for transmitting the routing information (RI) to the first mobile station (MS1), to the second mobile station (MS2) and to the at least one of the further mobile stations (MS3).

10 12. Central routing device (R) for a wireless communication system,

- having means (P) for generating a route for a connection (V) between a first mobile station (MS1) and a second mobile station (MS2) by way of at least one further mobile station (MS3) using positional information (PI1..3) for the first mobile station, the second mobile station and the further mobile stations
- and having a transmit unit (TX/RX) for transmitting the routing information (RI) to the first mobile station (MS1), to the second mobile station (MS2) and to the further mobile stations (MS3).

13. Mobile station (MS3) for a wireless communication system,

- having means (MP) for receiving routing information (RI) generated by a central routing device (R) on the basis of positional information (PI1..5) for a connection (V), and for evaluating the received routing information (RI)
- and having means (MTX/RX) for transmitting data received from a first mobile station (MS1) for the connection (V) to a second mobile station (MS2) according to the routing information (RI).